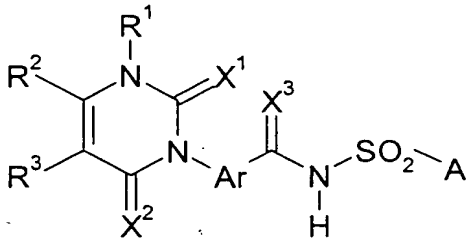
We claim:

1. A process for preparing 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I



I,

where the variables are each defined as follows:

R^1 is hydrogen, cyano, amino, C_1-C_6-alkyl, C_1-C_3-cyanoalkyl, C_1-C_6-haloalkyl, C_1-C_6-haloalkoxy, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl or phenyl-C_1-C_4-alkyl;

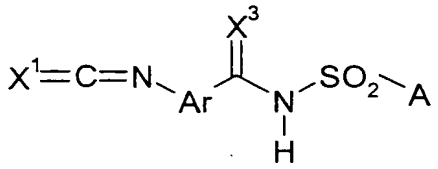
R^2 and R^3 are each independently hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl or C_3-C_6-haloalkynyl;

X^1, X^2 and X^3 are each independently oxygen or sulfur;

Ar is phenyl, which may be mono- or polysubstituted by the following groups: hydrogen, halogen, cyano, C_1-C_4-alkyl or C_1-C_4-haloalkyl; and

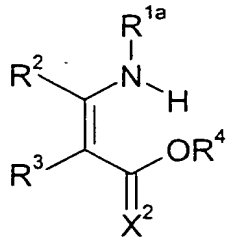
A is a radical derived from a primary or secondary amine or NH_2;

comprising the reaction of a phenyl iso(thio)cyanate of the formula II



II,

where the variables X^1, X^3, Ar and A are each as defined above,
with an enamine of the general formula III



III,

where

R^{1a} is as defined above for R^1 with the exception of amino;

R^2, R^3 and X^2 are each as defined above; and

R^4 is C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_1-C_3-alkoxy-C_1-C_3-alkyl, C_1-C_3-alkylthio-C_1-C_3-alkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl, C_3-C_6-haloalkynyl, C_3-C_7-cycloalkyl, C_1-C_6-cyanoalkyl or benzyl which is itself unsubstituted or substituted on the phenyl ring by methyl, methoxy, methylthio, halogen, nitro or cyano;

and, if appropriate, in a further step, the reaction of the resulting 3-phenyl(thio)uracil or 3-phenyldithiouracil of the formula I where R^1=R^{1a}, where R^1 is hydrogen, with an aminating agent of the formula IV

$$H_2N—L^1 \qquad IV,$$

where L^1 is a nucleophilic leaving group

to give 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I where R^1 = amino.

2. The process according to claim 1, wherein the reaction is effected in the presence of a base which is selected from alkali metal and alkaline earth metal carbonates, alkali metal and alkaline earth metal alkoxides, alkali metal and alkaline earth metal hydrides and tertiary amines.

3. The process according to either of the preceding claims, wherein the reaction is effected in at least one aprotic polar solvent, and the aprotic polar solvent has a water content of from 0 to 0.5% by weight, based on the total amount of compound II, compound III and solvent.

4. The process according to claim 3, wherein the solvent comprises at least 50% by volume of an aprotic polar solvent selected from carboxamides, carboxylic esters,

carbonates, nitriles and sulfoxides.

5. The process according to claim 4, wherein the solvent comprises at least 80% by weight of an aprotic polar solvent.

6. The process according to any of the preceding claims, wherein from 0.9 to 1.3 mol of the enamine of the formula III are used per mole of the compound II.

7. The process according to any of the proceding claims, wherein from 0.9 to 3 base equivalents are used per mole of the compound II.

8. The process according to any of the preceding claims, wherein a 3-phenyl(thio)-uracil or a 3-phenyldithiouracil, where R^1 is hydrogen, is prepared and this compound I is subsequently

(A) reacted with an aminating agent of the formula IV

$$H_2N\text{-}L^1 \qquad IV$$

where L^1 is a nucleophilically displaceable leaving group to obtain a compound of the formula I where

R^1 is amino; and

the variables R^2, R^3, X^1, X^2, X^3, Ar and A are each as defined above; or

(B) reacted with an alkylating agent of the formula V

$$R^{1b}\text{-}L^2 \qquad V$$

where

R^{1b} is C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl or C_3-C_6-haloalkynyl; and

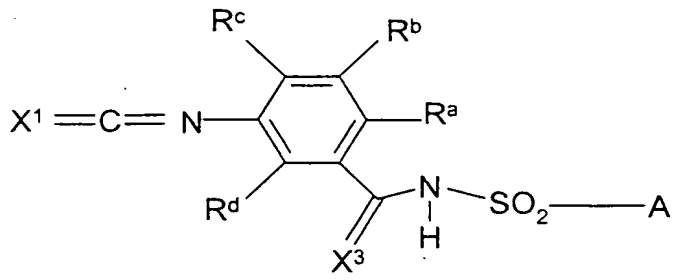
L^2 is a nucleophilically displaceable leaving group;

to obtain a compound of the general formula I where

R^1 is as defined for R^{1b}; and

the variables R^2, R^3, X^1, X^2, X^3, Ar and A are each as defined above.

9. The process according to any of the preceding claims, wherein the phenyl iso(thio)cyanate of the formula II is described by the formula IIA



IIA,

where
X^1, X^3 and A are each as defined above and
R^a, R^b, R^c and R^d are each independently
hydrogen, halogen, cyano, C_1-C_4-alkyl or C_1-C_4-haloalkyl.

10. The process according to claim 9, wherein, in formula IIA,
R^a is halogen, cyano or trifluoromethyl;
R^c is hydrogen or halogen; and
R^b and R^d are each hydrogen.

11. The process according to any of the preceding claims, wherein the A radical is $-NR^5R^6$ where the variables R^5 and R^6 are each defined as follows:
R^5 and R^6 are each independently
hydrogen, C_1-C_{10}-alkyl, C_2-C_{10}-alkenyl or C_2-C_{10}-alkynyl, each of which may be unsubstituted or substituted by one of the following radicals:
C_1-C_4-alkoxy, C_1-C_4-alkylthio, CN, NO_2, formyl, C_1-C_4-alkylcarbonyl, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkylaminocarbonyl, C_1-C_4-dialkylaminocarbonyl, C_1-C_4-alkylsulfinyl, C_1-C_4-alkylsulfonyl, C_3-C_{10}-cycloalkyl, 3- to 8-membered heterocyclyl having from one to three heteroatoms selected from O, S, N and an NR^7 group where R^7 is hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl,
phenyl which may itself have 1, 2, 3 or 4 substituents selected from halogen, C_1-C_4-alkyl, C_1-C_4-alkoxy, C_1-C_4-fluoroalkyl, C_1-C_4-alkyloxycarbonyl, trifluoromethylsulfonyl, C_1-C_3-alkylamino, C_1-C_3-dialkylamino, formyl, nitro or cyano;
C_1-C_{10}-haloalkyl, C_2-C_{10}-haloalkenyl, C_2-C_{10}-haloalkynyl, C_3-C_8-cycloalkyl, C_3-C_{10}-cycloalkenyl, 3- to 8-membered heterocyclyl having from one to three heteroatoms selected from O, S, N and an NR^7 group where R^7 is hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl,
phenyl or naphthyl,
where C_3-C_8-cycloalkyl, C_3-C_{10}-cycloalkenyl, 3- to 8-membered heterocyclyl, phenyl or naphthyl, each of which may themselves have 1, 2, 3 or 4

substituents selected from halogen, C_1-C_4-alkyl, C_1-C_4-alkoxy, C_1-C_4-fluoroalkyl,
C_1-C_4-alkyloxycarbonyl, trifluoromethylsulfonyl, formyl, C_1-C_3-alkylamino, C_1-C_3-dialkylamino, phenoxy, nitro or cyano; or

R^5 and R^6 together form a saturated or partially unsaturated 5- to 8-membered nitrogen heterocycle which may have, as ring members, one or two carbonyl groups, thiocarbonyl groups and/or one or two further heteroatoms selected from O, S, N and an NR^7 group
where R^7 is hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl, and which may be substituted
by C_1-C_4-alkyl, C_1-C_4-alkoxy and/or C_1-C_4-haloalkyl

12. The process according to claim 11, wherein R^5 and R^6 are each defined as follows:
R^5 and R^6 are each independently
hydrogen, C_1-C_6-alkyl which may if appropriate carry a substituent selected from the group consisting of halogen, cyano, C_1-C_4-alkoxy, C_1-C_4-alkoxycarbonyl, C_1-C_4-alkylthio, C_3-C_8-cycloalkyl, furyl, thienyl, 1,3-dioxolanyl and phenyl
which may itself optionally be substituted by halogen or C_1-C_4-alkoxy;
C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_3-C_8-cycloalkyl or phenyl
which may if appropriate carry 1 or 2 substituents selected from the group consisting of halogen, C_1-C_4-alkyl, C_1-C_4-fluoroalkyl, C_1-C_4-alkoxy, C_1-C_4-alkoxycarbonyl, nitro and C_1-C_3-dialkylamino;
naphthyl or pyridyl; or
R^5 and R^6 together form a five-, six- or seven-membered saturated or unsaturated nitrogen heterocycle which may contain, as a ring member, one further heteroatom selected from N, O and an NR^7 group
where R^7 is hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl or C_3-C_6-alkynyl,
and/or may be substituted by one, two or three substituents selected from C_1-C_4-alkyl and C_1-C_4-haloalkyl.

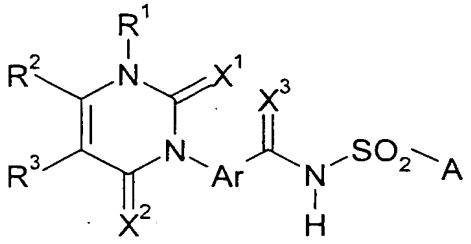
13. The process according to any of the preceding claims, wherein X^1, X^2 and X^3 are each oxygen.

14. The process according to any of the preceding claims, wherein R^1 is hydrogen, amino or C_1-C_4-alkyl.

15. The process according to any of the preceding claims, wherein R^2 is hydrogen, C_1-C_4-alkyl or C_1-C_4-haloalkyl.

16. The process according to any of the preceding claims, wherein R^3 is hydrogen.

17. A process for preparing 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I



I,

where

R^1 is C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl or C_3-C_6-haloalkynyl;

R^2 and R^3 are each independently hydrogen, C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl or C_3-C_6-haloalkynyl;

X^1, X^2 and X^3 are each independently oxygen or sulfur;

Ar is phenyl, which may be mono- or polysubstituted by the following groups: hydrogen, halogen, cyano, C_1-C_4-alkyl or C_1-C_4-haloalkyl; and

A is a radical derived from a primary or secondary amine or NH_2,

wherein 3-phenyl(thio)uracils or 3-phenyldithiouracils of the formula I, where R^1 is hydrogen, are reacted with an alkylating agent of the formula V

$$R^{1b}—L^2 \qquad V,$$

where L^2 is a nucleophilically displaceable leaving group, and

R^{1b} is C_1-C_6-alkyl, C_1-C_6-haloalkyl, C_3-C_7-cycloalkyl, C_2-C_6-alkenyl, C_2-C_6-haloalkenyl, C_3-C_6-alkynyl or C_3-C_6-haloalkynyl.